

The previously provided comments have been addressed. The following answers to the comments from the review of the revised documents are shown in bold:

#### General Comments

- Please address the following septic system design elements:
  - The revised curtain drain outlet pipe is shown within 5-feet of the septic system. Please update to meet required separating distances.  
**The plans have been revised to provide a 25 foot separation. The pipe leading down to the basin is a solid pipe not a perforated curtain drain.**

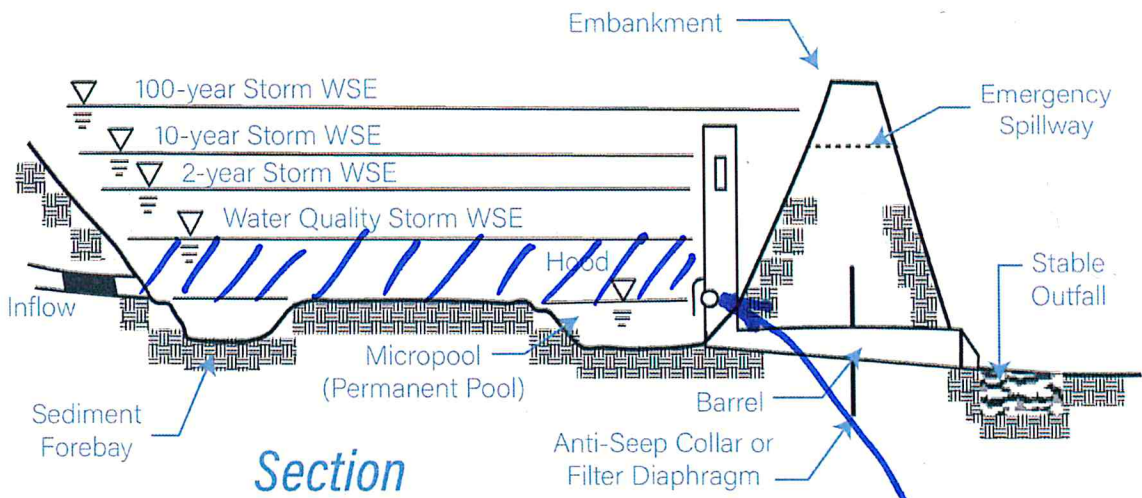
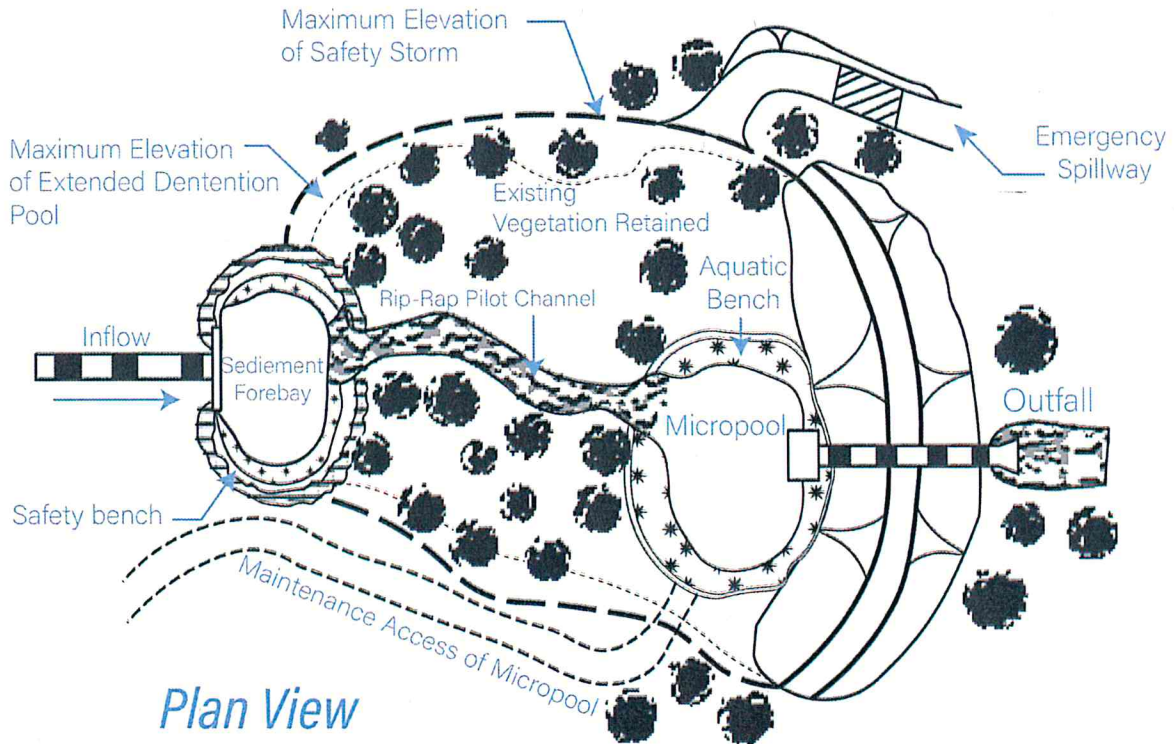
#### Site Plans

- Please review the elevations for the level spreaders. The detail calls for the bottom of rip rap in the forebay to be set at elevation 206 and the site plans call for elevation 205.5. The detail calls for 6-inches of clearance from top of berm to top of rip rap. Based on the spot grades shown for the water quality basin outlet the top of rip rap will match the top of berm elevation.  
**The detail has been revised and the spot grades on sheet 3 have been revised to 209.0.**

#### Stormwater Management Report

- It appears that storage volume above the low-level outlet is being counted towards the water quality volume storage provided by the forebay and water quality basin. Please verify that the reported water quality volume storage only includes the volume below the low-level outlet.  
**The water under the low-level outlet is a permanent pool, and will not be WQV. The water above the low-level outlet will be the WQV, in accordance in the attached Schematic plan from the new Manual.**
- Please provide supporting documentation or calculations for the Time of Concentrations used in the stormwater model as there is a significant increase from the prior drainage analysis.  
**Attached are the work sheets from the stormwater model for how Tc was calculated.**
- Please provide supporting documentation or calculations for the CN value used in the stormwater models as the CN values do not appear to correspond to the C values used to model pre-development conditions in the prior drainage analysis.  
**The existing site has been used in the past for stockpiling and processing materials from several other projects in the Lombardi Business park. Which is what we are proposing to use the site for. Therefore, I used 85 as the CN value, please see the attached SCS Curve Number chart.**

**Figure 13-24. Micropool Extended Detention Pond Schematic**



Source: Adapted from NYDEC, 2001.

# TR55 Tc Worksheet

## Hyd. No. 1

Existing Area 1

<u>Description</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>Totals</u>
<b>Sheet Flow</b>				
Manning's n-value	= 0.400	0.400	0.011	
Flow length (ft)	= 200.0	300.0	0.0	
Two-year 24-hr precip. (in)	= 3.45	3.45	0.00	
Land slope (%)	= 2.00	10.00	0.00	
<b>Travel Time (min)</b>	<b>= 36.01</b>	<b>+ 26.16</b>	<b>+ 0.00</b>	<b>= 62.17</b>
<b>Shallow Concentrated Flow</b>				
Flow length (ft)	= 0.00	0.00	0.00	
Watercourse slope (%)	= 0.00	0.00	0.00	
Surface description	= Paved	Paved	Paved	
Average velocity (ft/s)	= 0.00	0.00	0.00	
<b>Travel Time (min)</b>	<b>= 0.00</b>	<b>+ 0.00</b>	<b>+ 0.00</b>	<b>= 0.00</b>
<b>Channel Flow</b>				
X sectional flow area (sqft)	= 0.00	0.00	0.00	
Wetted perimeter (ft)	= 0.00	0.00	0.00	
Channel slope (%)	= 0.00	0.00	0.00	
Manning's n-value	= 0.015	0.015	0.015	
Velocity (ft/s)	= 0.00	0.00	0.00	
Flow length (ft)	= 0.0	0.0	0.0	
<b>Travel Time (min)</b>	<b>= 0.00</b>	<b>+ 0.00</b>	<b>+ 0.00</b>	<b>= 0.00</b>
<b>Total Travel Time, Tc</b> .....				<b>62.17 min</b>

# TR55 Tc Worksheet

## Hyd. No. 2

Proposed Area 1

<u>Description</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>Totals</u>
<b>Sheet Flow</b>				
Manning's n-value	= 0.400	0.400	0.011	
Flow length (ft)	= 240.0	260.0	0.0	
Two-year 24-hr precip. (in)	= 3.45	3.45	0.00	
Land slope (%)	= 2.00	5.00	0.00	
<b>Travel Time (min)</b>	<b>= 41.66</b>	<b>+ 30.79</b>	<b>+ 0.00</b>	<b>= 72.45</b>
<b>Shallow Concentrated Flow</b>				
Flow length (ft)	= 0.00	0.00	0.00	
Watercourse slope (%)	= 0.00	0.00	0.00	
Surface description	= Paved	Paved	Paved	
Average velocity (ft/s)	= 0.00	0.00	0.00	
<b>Travel Time (min)</b>	<b>= 0.00</b>	<b>+ 0.00</b>	<b>+ 0.00</b>	<b>= 0.00</b>
<b>Channel Flow</b>				
X sectional flow area (sqft)	= 0.00	0.00	0.00	
Wetted perimeter (ft)	= 0.00	0.00	0.00	
Channel slope (%)	= 0.00	0.00	0.00	
Manning's n-value	= 0.015	0.015	0.015	
Velocity (ft/s)	= 0.00	0.00	0.00	
Flow length (ft)	= 0.0	0.0	0.0	
<b>Travel Time (min)</b>	<b>= 0.00</b>	<b>+ 0.00</b>	<b>+ 0.00</b>	<b>= 0.00</b>
<b>Total Travel Time, Tc .....</b>				<b>72.45 min</b>

# TR55 Tc Worksheet

## Hyd. No. 5

Existing Area 2

<u>Description</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>Totals</u>
<b>Sheet Flow</b>				
Manning's n-value	= 0.400	0.400	0.011	
Flow length (ft)	= 240.0	260.0	0.0	
Two-year 24-hr precip. (in)	= 3.45	3.45	0.00	
Land slope (%)	= 2.00	5.00	0.00	
<b>Travel Time (min)</b>	<b>= 41.66</b>	<b>+ 30.79</b>	<b>+ 0.00</b>	<b>= 72.45</b>
<b>Shallow Concentrated Flow</b>				
Flow length (ft)	= 0.00	0.00	0.00	
Watercourse slope (%)	= 0.00	0.00	0.00	
Surface description	= Paved	Paved	Paved	
Average velocity (ft/s)	= 0.00	0.00	0.00	
<b>Travel Time (min)</b>	<b>= 0.00</b>	<b>+ 0.00</b>	<b>+ 0.00</b>	<b>= 0.00</b>
<b>Channel Flow</b>				
X sectional flow area (sqft)	= 0.00	0.00	0.00	
Wetted perimeter (ft)	= 0.00	0.00	0.00	
Channel slope (%)	= 0.00	0.00	0.00	
Manning's n-value	= 0.015	0.015	0.015	
Velocity (ft/s)	= 0.00	0.00	0.00	
Flow length (ft)	= 0.0	0.0	0.0	
<b>Travel Time (min)</b>	<b>= 0.00</b>	<b>+ 0.00</b>	<b>+ 0.00</b>	<b>= 0.00</b>
<b>Total Travel Time, Tc .....</b>				<b>72.45 min</b>

# TR55 Tc Worksheet

## Hyd. No. 6

Proposed Area 2

<u>Description</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>Totals</u>
<b>Sheet Flow</b>				
Manning's n-value	= 0.400	0.400	0.011	
Flow length (ft)	= 240.0	260.0	0.0	
Two-year 24-hr precip. (in)	= 3.45	3.45	0.00	
Land slope (%)	= 2.00	5.00	0.00	
<b>Travel Time (min)</b>	<b>= 41.66</b>	<b>+ 30.79</b>	<b>+ 0.00</b>	<b>= 72.45</b>
<b>Shallow Concentrated Flow</b>				
Flow length (ft)	= 0.00	0.00	0.00	
Watercourse slope (%)	= 0.00	0.00	0.00	
Surface description	= Paved	Paved	Paved	
Average velocity (ft/s)	= 0.00	0.00	0.00	
<b>Travel Time (min)</b>	<b>= 0.00</b>	<b>+ 0.00</b>	<b>+ 0.00</b>	<b>= 0.00</b>
<b>Channel Flow</b>				
X sectional flow area (sqft)	= 0.00	0.00	0.00	
Wetted perimeter (ft)	= 0.00	0.00	0.00	
Channel slope (%)	= 0.00	0.00	0.00	
Manning's n-value	= 0.015	0.015	0.015	
Velocity (ft/s)	= 0.00	0.00	0.00	
Flow length (ft)	= 0.0	0.0	0.0	
<b>Travel Time (min)</b>	<b>= 0.00</b>	<b>+ 0.00</b>	<b>+ 0.00</b>	<b>= 0.00</b>
<b>Total Travel Time, Tc</b> .....				<b>72.45 min</b>

## SCS Curve Numbers (CN)

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<u>Land Use</u>	<u>Hydrologic Soil Group</u>			
	A	B	C	D
<b>Residential</b>				
Average Lot Size:				
1/8 acre or less	77	85	90	92
1/4 acre	61	75	83	87
1/3 acre	57	72	81	86
1/2 acre	54	70	80	85
1 acre	51	68	79	84
2 acre	46	65	77	82
<b>Paved parking lots, roofs</b>	98	98	98	98
<b>Streets and Roads</b>				
paved with curbs	98	98	98	98
gravel	76	85	89	91
dirt	72	82	87	89
<b>Commercial and business areas</b>	89	92	94	95
<b>Industrial districts</b>	81	88	91	93
<b>Open spaces, lawns, parks</b>				
good condition	39	61	74	80
fair condition	49	69	79	84
<b>Fallow</b>	77	86	91	94
<b>Row crops</b>	72	81	88	91

\*Average Runoff Condition.  $I_a = 0.2S$   
Source: Soil Conservation Service TR-55